

estimated \$178 million in damages.

Flows on the **Cosumnes River** reached approximately 90,000 cfs and numerous downstream agricultural levees broke and were overtopped. Areas of Wilton and Point Pleasant were flooded as were thousands of acres of surrounding farm land. The Cosumnes hit the Mokelumne River, which was moving at 5,000 cfs, and threatened the Delta levee system. The Cosumnes River levee breaches, however, lowered the high river levels and alleviated the impact on the Delta.

The Delta levees overall held up surprisingly well under the pressure from the flow onslaught from the Sacramento and Cosumnes rivers and San Joaquin River system. But, the Delta region was not problem free and state and federal agencies carried out ten federal flood fights and numerous state and local fights, which cost more than \$5 million.

Levees

The flood management network of levees and bypasses along the state's rivers has worked well over the years but much of the new year's flood damage was caused by numerous levee breaks. Several of the accidental levee breaks, particularly along the San Joaquin River, occurred where the natural river channel was significantly narrowed by man. However, the most worrisome levee break was the one that occurred along the Feather River that had recently passed government maintenance tests. "It is a real concern and makes you wonder how reliable any of our levees are," said Ray Barsch, general manager of the state Reclamation Board.

It makes the words of state engineer Hall spoken more than 100 years ago ring true: that there are two kinds of levees, those that have failed and those that will fail.

The protection provided by levees, which is a matter of considerable controversy, encourages development in the floodplains that in turn exposes more people and infrastructure to flood hazards. The thousands of miles of

levees along the state's waterways are a key part of the flood protection network but have long been considered the weak link in the flood control chain.

There are two categories of levees — federal project and nonproject. There are 1,760 miles of Corps project levees in the Central Valley that are constructed and repaired according to requisite standards. Project levees are operated and maintained by DWR or local reclamation districts through the state Reclamation Board. Reclamation districts are created when landowners form a local agency in accordance with state law and assess themselves for flood control, reclamation purposes and water supply.

Corps levees run along the Sacramento River from near Chico through the Delta and from east of Fresno to Stockton on the San Joaquin River. Since the 1986 flood, there has been an ongoing levee rehabilitation program, which targets the population centers along the Sacramento River system.

